

Construction, validation and reliability of the family adaptation scale of adults with mental disorders

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ABSTRACT

Introduction: Mental disorders are psychiatric disorders that are manifested by failures in the adaptation process and that are expressed by abnormal behavior, affecting both the person who has the illness and all members of his family. **Objective:** Design and validate an instrument to measure the adaptation of the family of adults with mental disorders. **Methodology:** The instrument was developed from the phases proposed by Sanchez and the questions were developed based on the Nursing Outcomes Classification (NOC) and on the literature review. The instrument was applied to 261 family members with a member with mental health problems from the northeastern part of the State of Guanajuato, Mexico. For the validity of the construct, factor extraction with principal components and Varimax rotation was performed with Eigen values above 1 and factorial load greater than .40. **Results:** The analysis showed six factors with an explained variance of 62.84%, while the Cronbach's alpha reliability coefficient ranged between .62 and .83 for the dimensions and .84 on the total scale. **Conclusion:** The instrument showed that it is reliable and valid for measuring family adaptation.

Key Words: Adaptation; family; mental health; nursing standardized terminology (DeCS).

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INTRODUCTION

Mental Disorders are defined as “psychiatric disorders that are manifested by failures in the adaptation process, expressed primarily as abnormalities of thought, feelings and behavior that produce distress or impairment of function”⁽¹⁾ and are caused by biological and social factors and adverse experiences⁽²⁾, which are associated to a deterioration of the person suffering from such illness⁽³⁾.

Mental Disorders not only affect the mentally ill person, but all members of the family^(4,5), whether they live in the same house or not. The onset of a mental disorder in a family member is very traumatic, so it is difficult to accept this disease and causes a series of changes in the day-to-day functioning of each member, and if the members lack resources to cope with the situation, multiple dysfunctions of roles will occur⁽⁶⁾.

Mental disorders often lead people and their families to fall into poverty and disintegration due to the high cost of treatment and access to necessary services, which in most cases are not available in all cities; in addition, many of these services lack sufficient professionals, and health care modules do not have networks with a higher level of expertise⁽⁷⁾.

Moreover, the family burden will focus on the difficulties and challenges presented as a result of the illness of the relative, and, therefore, will have negative consequences for both the caregiver and the family members⁽⁸⁾.

Families that are in charge of the patient care^(9,10) face multiple situations that involve an overload for their members, which are often affected by feelings of discomfort and suffering⁹, due to many factors such as the stigmatization of the mentally ill by the society⁽¹¹⁾.

The evidence shows that an adaptive family environment is essential to satisfy family members, which leads to reducing emotional and behavioral problems of all members. A family caregiver requires an environment adapted in order to function effectively and with emotional stability⁽¹²⁾.

Families may not be prepared to accept the mental illness and may be in denial; families with members with mental disorders often have poor adaptation⁽¹²⁾; therefore, complete family adaptation is the key to its proper functioning, which contributes to the conservation of the health of all members⁽¹⁰⁾.

It is important to explore the family context, the way in which family members respond to the need to adapt to the situation they are experiencing, in order to determine their individual and family well-being.

The adaptation construct has been studied by the theoretician Sister Callista Roy, who defined the concept as the “process and result by which people, with feelings and thoughts, use their conscience and choice to create human and environmental integration”^(13,14).

However, as such it does not define family adaptation, so an adjustment was made to the general concept of adaptation by including the variables “family” and “mental

disorder”, and it is defined as the process that favors the acceptance of the members to move forward in the care of the patient through support, situation that requires well-being and emotional adjustment for their own safety.

Family adaptation is the result of the appropriate encounter with the needs of family members, as a whole, and the effective response to the requirements⁽¹²⁾. The possibilities of family adaptation will depend on the mental health of the family throughout life⁽¹⁵⁾.

So far, in Mexico, no instruments that measure family adaptation with a member with a mental disorder have been identified; thus, the purpose of the study was to design and validate an instrument to measure the family adaptation of adults with mental disorders.

METHODOLOGY

This is a descriptive cross-sectional study involving 261 individuals from families with one member with a mental disorder; these families belong to the northeastern part of the state of Guanajuato, Mexico, and it was carried out during the months of August and September 2018.

The participants answered the instrument called “Family Adaptation Scale of Adults with Mental Disorders” which is comprised by 21 questions with five-point Likert-type answers with never-to-always options, consisting of six dimensions, i.e., resilience (1, 2, 3 and 4), well-being (5, 6, 7, 8 and 9), safety in the care (10 and 11), emotional adjustment (12, 13, 14 and 15), acceptance of the care (16, 17 and 18), and support (19, 20 and 21).

Before collecting the data, the participants gave their consent by signing a letter, according to the provisions of the Regulation of the General Health Act in the Area of Health Research⁽¹⁶⁾. The instrument was applied in the homes of the participants, in a quiet environment without distractions, and with enough time to answer each question. They were asked to respond as surely as possible, and any doubt they had was clarified.

The statistical analysis consisted of the factor analysis and Cronbach’s alpha reliability coefficient.

Instrument design

The instrument was designed by teaching staff of the Irapuato-Salamanca Campus and the Celaya-Salvatierra Campus, both of the University of Guanajuato.

The construction of instruments proposed by Sanchez⁽¹⁷⁾ was taken as a reference, which includes: defining the concept to be measured, determining the target population, developing the items, assessing the content validity, developing the instructions, testing the items, assessing validity and reliability.

The concept to be measured was family adaptation. The target population was comprised by the members of the families that have a relative with a mental disorder; the families were from the northeastern part of the State

of Guanajuato, Mexico. In the development of the items, the Nursing Outcomes Classification (NOC)⁽¹⁸⁾ was used as a reference, 1308; adaptation to physical disability, 1204; emotional balance, 1305; psychosocial modification: life change, 2608; family resilience, 1705; health guidance, 2009; state of comfort; environment, and 2606; family health status. These were modified for family adaptation.

Regarding content validity it was determined by evaluation by judges (three nursing professionals, two with a PhD and one with a Masters' degree, two of which work in the clinical field), who reviewed the sufficiency, relevance, and clarity of the questions. Regarding the evaluation of the pertinence of the questions, the index of concordance between observers and the content validity index for the evaluations for the expert's evaluation with respect to the pertinence of each question was calculated, for which the experts were asked to rate each question with a two-point scale (one = fulfills and zero = does not fulfill). The content validity index for the total instrument was the total percentage of the questions that experts gave the score of one; the result indicated an acceptance greater than 80% of the scale on the part of the experts.

After the construction of the questions, the instructions

were developed, which were assessed by a relative from a family with a member with a mental disorder, to determine the understanding of the instructions.

Regarding the evaluation of the validity of the construct, the extraction of factors by principal components and Varimax rotation were performed, which allowed interpreting the explained total variance, with characteristic roots (Eigen values) above 1 and factor loads greater than .4019.

With regard to reliability, an evaluation of the internal consistency of the total instrument was performed using the Cronbach's alpha, taking as reference the value $\alpha = .80$ as acceptable⁽²⁰⁾.

RESULTS

Table 1 shows the descriptive statistics of the 21 questions. The analysis explains that all the questions have enough variance to be included in the factor analysis. The total score of the analyzed scale was in the range of 21 and 105 points, an average of 60.02 and an *SD* = 13.59, with a median of 60.71.

Table 2 shows the results of Pearson's *r* correlation

Table 1. Descriptive Statistics

Question	Median	Standard Deviation
Ítem 1	3.22	1.26
Ítem 2	2.67	1.24
Ítem 3	3.67	1.09
Ítem 4	3.39	1.06
Ítem 5	3.51	.97
Ítem 6	4.04	1.07
Ítem 7	3.33	1.08
Ítem 8	3.41	1.00
Ítem 9	3.95	1.04
Ítem 10	3.58	1.13
Ítem 11	3.45	1.12
Ítem 12	3.48	1.12
Ítem 13	2.63	1.22
Ítem 14	2.41	1.17
Ítem 15	3.26	.98
Ítem 16	3.15	1.21
Ítem 17	3.51	1.17
Ítem 18	3.56	1.20
Ítem 19	3.78	1.08
Ítem 20	3.67	1.15
Ítem 21	3.76	.97

Source: Family adaptation scale of adults with mental disorders

n = 261

Table 2. Correlations of each question with the total scale

Question	<i>r</i>	<i>p</i>
Ítem 1	.386	.001
Ítem 2	.521	.001
Ítem 3	.577	.001
Ítem 4	.551	.001
Ítem 5	.492	.001
Ítem 6	.292	.001
Ítem 7	.513	.001
Ítem 8	.629	.001
Ítem 9	.525	.001
Ítem 10	.555	.001
Ítem 11	.506	.001
Ítem 12	.436	.001
Ítem 13	.278	.001
Ítem 14	.302	.001
Ítem 15	.629	.001
Ítem 16	.401	.001
Ítem 17	.543	.001
Ítem 18	.539	.001
Ítem 19	.618	.001
Ítem 20	.513	.001
Ítem 21	.521	.001

Source: Family adaptation scale of adults with mental disorders

n = 261

analysis. The values of each question with the total scale showed a moderate adjustment. Additionally, the correlations were positive and significant ($p < .001$).

The following criteria were considered for the factor analysis: the correlation matrix showed multiple values greater than .40; the evaluation of the adequacy of the sample by means of the Kaiser-Mayer-Olkin test obtained an index of .80, thus indicating that the variables measure common factors. Finally, the result of the Barlett's sphericity test was statistically significant ($p < .001$, $gl = 210$, $X^2 = 1799.167$), which indicated that the factor analysis would continue to determine the underlying factors in the correlation matrix^(19, 21,22).

A simple analysis with orthogonal rotations was tested; the factors showed the same levels of interpretation as the factor analysis with Varimax rotation. The factor analysis by principal components with Varimax rotation suggested the analysis with six factors, which explains the 62.84% of the total variance (Table 3).

When reviewing the matrix of communalities it was observed that the majority are greater than .40.

Table 4 shows the values of the reliability coefficient for

the six factors and the total scale, values that are considered acceptable.

DISCUSSION

Because in Latin America there is no instrument that measures the studied variables, therefore, the realization of this instrument was considered, so that nurses have a baseline to identify factors that trigger a poor capacity of family adaptation of people with mental disorders, because as Mathew K, et al⁽⁶⁾, mentions, alterations occur in the different family roles, which affects all family members⁽⁴⁾.

The instrument will be used later for future research, so that nursing personnel can have evidence on the subject and be able to devise strategies and interventions to help families to adapt to the circumstances that arise at that time in their life.

Regarding Roy's theory, this helps to reaffirm what was mentioned in the interdependence mode, which focuses on interactions to give and receive affection, respect and value, relating to the social context and interaction⁽¹⁴⁾, which is important for family resilience.

Tabla 3. **Factor analysis adjusted to six factors**

Questions	Factors					
	1	2	3	4	5	6
24	.722					
23	.657					
22	.580					
12	.555					
11	.531					
13		.769				
14		.760				
19		.496				
18		.440				
20			.883			
21			.851			
5				.689		
4				.625		
6				.599		
9				.492		
1					.809	
2					.615	
3					.569	
16						.833
17						.774
15						.539
% varianza explicada	12.26	12.08	10.18	10.12	9.17	9.00

Source: Family adaptation scale of adults with mental disorders

n = 261

Extraction method: main axis with Varimax rotation

Table 4. Reliability of the factors

Factor	Ítems	Cronbach's alpha
F1	4	.66
F2	5	.75
F3	2	.83
F4	4	.68
F5	3	.67
F6	3	.62
Escala Total	21	.84

Source: Family adaptation scale of adults with mental disorders

n = 261

CONCLUSION

The findings show a valid and reliable instrument to measure family adaptation of adults with mental disorders. The importance of the instrument for the discipline of nursing is that it can be used in the practice, in order to investigate the adaptation strategies used by members of a family with an adult with a mental disorder, and thus generate intervention strategies to ensure the adaptation of such family members to the situations they live in and to be able to effectively direct nursing care.

CONFLICT OF INTERESTS

The authors represent that there are no potential conflicts of interest regarding this research, authorship. and/or publication of this article.

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BIBLIOGRAPHIC REFERENCES

1. National Center for Biotechnology Information. Mental disorders. [Internet]. [acceso 25 Septiembre 2018]. Disponible en: <https://www.ncbi.nlm.nih.gov/mesh/?term=mental+disorder>
2. Nathalie A, Díaz D, Ramírez L. Trastorno mental en el contexto carcelario y penitenciario. Carta Comunitaria. 2017; 25(143):77-88.
3. Forman-Hoffman V, Batts K, Hedden S, Spagnola K, Bose J. Comorbid mental disorders among adults in the mental health surveillance survey. *Annals of Epidemiology* [Internet]. 2018 [acceso 13 Marzo 2019]; 28: 468-474. Disponible en: <https://doi.org/10.1016/j.annepidem.2018.03.002>
4. Crowe A, Lyness KP. Family functioning, coping, and distress in families with serious mental illness. *The Family Journal: Counseling and therapy for couples and families* [Internet]. 2014 [acceso 25 Septiembre 2018]; 22(2): 186-197. Disponible en: [doi:10.1177/1066480713513552](https://doi.org/10.1177/1066480713513552)
5. Simo B, Bamvita JM, Caron J, Feury MJ. Predictors of mental health service use among individuals with high psychological distress and mental disorders. *Psychiatry Research* [Internet]. 2018 [acceso 12 Marzo 2019]; 270: 1122-1130. Disponible en: <https://doi.org/10.1016/j.psychres.2018.10.019>
6. Mathew K J, Sharma S, Bhattacharjee D. Helping families of persons with mental illness: role of psychiatric social work. *Indian J PsySoc Work* [Internet]. 2017 [acceso 25 Septiembre 2018]; 8(2): 44-50. Disponible en: [doi:10.29120/IJPSW.2017.v8.i2.40](https://doi.org/10.29120/IJPSW.2017.v8.i2.40)
7. Secretaría de Salud. Programa de Acción Específico Salud Mental 2013-2018 [Internet]. 2018 [actualizado 2014; acceso 24 Septiembre 2018]. Disponible en: <https://www.gob.mx/salud/documentos/programa-de-accion-especifico-salud-mental-2013-2018>
8. Ennis E, Bunting B. Family burden, family health and personal mental health. *BMC Public Health* [Internet]. 2013 [acceso 25 Septiembre 2018]; 13: 255. Disponible en: doi.org/10.1186/1471-2458-13-255
9. Martín E, Obando D, Sarmiento P. La adherencia familiar en el trastorno mental grave. *Aten Primaria* [Internet]. 2017 [acceso 25 Septiembre 2018]; 50(9): 519-526. Disponible en: doi.org/10.1016/j.aprim.2017.06.010
10. Casanova-Rodas L, Rascón-Gasca ML, Alcántara-Chabelas H, Soriano-Rodríguez A. Apoyo social y funcionalidad familiar en personas con trastorno mental. *Salud Ment*. 2014;37(5): 443-448.
11. Karim R, Kwan M, Finlay A, Kondalsamy-Chennakesavan S, Toombs M, Nicholson G, et al. Mortality in hospital patients with and without mental disorders: A datalinkage cohort study. *Journal of Psychiatric Research*. 2019; 111:104-109.
12. Vagharseyyedin S, Gholami M, Hajihoseini M, Esmaeili A. The effect of peer support groups on family adaptation from the perspective of wives of war veterans with posttraumatic stress disorder. *Public Health Nurs* [Internet]. 2017 [acceso 25 Septiembre 2018]; 36(6): 547-554. Disponible en: [doi:10.1111/phn.1313](https://doi.org/10.1111/phn.1313)
13. Roy C. *The Roy Adaptation Model*. 3rd ed. New Jersey: PEARSON; 2009.
14. Moreno-Fergusson ME. Introducción al Modelo de Adaptación de Callista Roy. En: Muñoz de Rodríguez L, Moreno-Fergusson ME. *De la teoría de enfermería a la práctica: Experiencias con proyectos de gestión del cuidado*. Bogotá: Universidad de La Sabana; 2016. p. 45-61.
15. Gutkevich EV. Family mental health and adaptation. *Journal of the European Psychiatric Association* [Internet]. 2010 [acceso 25 Septiembre 2018]; 25(1): 797. Disponible en: [doi.org/10.1016/S0924-9338\(10\)70788-4](https://doi.org/10.1016/S0924-9338(10)70788-4)
16. Diario Oficial de la Federación. Reglamento de la Ley General de Salud en materia de investigación para la salud [Internet]. DOF.1986 [Acceso 16 Mayo 2018]. Disponible en: <http://www.salud.gob.mx/unidades/cdi/nom/compi/rlgsmis.html>
17. Sánchez R, Echeverry J. Validación de Escalas de Medición en Salud. *Rev. Salud pública*. 2004; 6(3):302-318.

18. Moorhead S, Swanson E, Johnson M, Maas M. Clasificación de Resultados de Enfermería (NOC). 6ta ed. España: Elsevier; 2018.
19. Mendenhall W, Beaver R, Beaver B. Introducción a la probabilidad y la estadística. 13a ed. México: Cengage Learning; 2010.
20. Polit D, Beck C. Investigación en enfermería. 9a ed. Philadelphia: Wolters Kluwer; 2018.
21. Waltz C, Strickland O, Lenz E. Measurement Nursing and Helath Research. 4ta ed. New York: Springer Publishing Company; 2010.
22. Kellar S, Kelvin E. Munro's Statistical Methods for Helath Care Research. 6ta ed. China: Wolters Kluwer; 2013.